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ABSTRACT

In conjunction with a national evaluation of the Emergency School Aid Act, an indepth analysis of 24 selected elementary schools was conducted. Data for the study were collected in 1974-75 through observation of classroom behavior, through interviews with school principals, and through self-administered questionnaires completed by the teachers and principal in each school. This report examines the relationship between administrative leadership and schools' success in raising achievement. Analysis of the survey data showed that schools in which principals emphasized the importance of selecting basic instructional materials and made more of the decisions in the instructional area were more likely to show achievement gains in the subject areas of reading and mathematics during 1974-75. (Author/JG)

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ADMINISTRATIVE LEADERSHIP IN A SAMPLE OF SUCCESSFUL SCHOOLS FROM THE NATIONAL EVALUATION OF THE EMERGENCY SCHOOL AID ACT*

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ADMINISTRATIVE LEADERSHIP IN A SAMPLE OF SUCCESSFUL SCHOOLS FROM THE NATIONAL EVALUATION OF THE EMERGENCY SCHOOL AID ACT

INTRODUCTION

Under contract with the U.S. Office of Education (USOE), System Development Corporation (SDC) is conducting a longitudinal evaluation study of two closely related educational programs authorized by the Emergency School Aid Act (ESAA). The Basic Grant Program, the largest of the ESAA programs, consists of grants to local educational agencies for the purpose of implementing plans to (a) completely eliminate minority group isolation in all schools within the agency, (b) eliminate or reduce minority group isolation in one or more schools within the agency, (c) reduce the total number of minority group children who are in isolated schools, or (d) prevent minority group isolation that is likely to occur without assistance from the Act. The second largest program, the Pilot Program, was created to support "unusually promising ESAA pilot projects designed to overcome the adverse effects of minority group isolation by improving the academic achievement of children." To be eligible for the Pilot Program, school districts are required to have 15,000 minority students enrolled, or minority students must constitute more than 50 percent of the total district enrollment.

The results reported in this paper pertain to a special in-depth study of successful schools being conducted as part of the combined ESAA Basic/Pilot evaluation.

OVERVIEW OF ESAA PROGRAM LEGISLATION AND FUNDING

Congress enacted the Emergency School Aid Act as Title VII of the Educational Amendments of 1972 (Public Law 92-318, Title VII, Sections 701-720) to encourage

the voluntary elimination, reduction, or prevention of minority group isolation in elementary and secondary schools, to meet the special needs incident to the elimination or reduction of segregation and discrimination, and to assist school children in overcoming the educational disadvantages of minority group isolation.

Although the Act, as amended in 1974 (Public Law 93-380, Section 641), authorized the appropriation of $1 billion for fiscal year 1973 and a similar amount for the period ending June 30, 1976, actual appropriations have amounted to $270 million, $234 million, and $215 million for fiscal year 1973, 1974, and 1975, respectively. Since funds are annually appropriated for obligation and expenditure during the fiscal year succeeding the year of authorization, the major thrust of the Act began during school year 1973-74, and is expected to continue through school year 1976-77.

Seventy-four percent of the Act's annual appropriation is reserved for the Basic Grants Program (59%) and the Pilot Grants Program (15%). The Basic Grants Program is essentially a desegregation program designed to reduce minority group isolation and to assist elementary and secondary students in overcoming the educational disadvantages of minority group isolation. The Pilot Grants Program, on the other hand, is primarily a compensatory education program intended to improve the academic achievement of children in minority isolated schools (i.e., schools exceeding 50% minority enrollment).

OVERVIEW OF THE IN-DEPTH STUDY

The in-depth examination of successful ESAA schools was specifically designed to provide:

- Detailed documentation of the more successful ESAA school programs and the contexts in which they operate.
- In-depth description and assessment of program components that differentially affect academic achievement.
- Replication costs of the more successful ESAA school programs and program components.

The underlying purpose of this study is to derive an analytic profile of a successful school that can serve as a replication model for school districts interested in implementing similar programs. In addition, this study was designed to inform future analyses of ESAA program impact when longitudinal program data become available.

The conceptual framework that guided the in-depth study concentrates on five key areas of an ESAA school program:

- Equality of educational opportunity at school.
- Parent and community involvement with school.
- Characteristics of reading and math instruction, including relevant teacher attitudes and instructional techniques.

- Availability and use of specific instructional resources in reading and math.

- Organizational climate at school.

Of the five areas investigated in the in-depth study, the organizational climate of the school appears to be an important area for future research in program evaluation. The relationship between the school's administrative characteristics and student achievement is the major theme of this paper.

OVERVIEW OF IN-DEPTH STUDY METHODOLOGY

Twenty-four elementary schools participating in the ESAA evaluation were selected for in-depth study. Fifteen schools were selected from the top 40 percent of all schools ranked on reading and math achievement for 1973-1974; nine less-successful schools, similar to the first group in demographic characteristics, were selected from the bottom 40 percent. (Six secondary schools from the top of the ranked order in reading and/or math achievement were also selected for in-depth study, but are not included in this analysis).

Achievement gains in 1973-1974 were used to identify programs which, by virtue of having been relatively successful in their first year of operation, stood a good chance of being successful in 1975. On-site descriptions of program operations in the selected schools were obtained in 1974-1975, and were then examined in relation to 1974-1975 achievement rankings.

Special interview, observation and self-administered questionnaires were developed for the in-depth study, and interviewer-observers were trained in their use. Two-person teams spent two weeks at each site observing classroom

behavior and interviewing teachers from two classes at each of grades 3, 4, and 5. The interviewer/observer teams received no information on the achievement rank of the schools they visited. The classes selected for in-depth study contained the majority of students participating in the ESAA evaluation. In addition, principals at each site were interviewed, and both teachers and principals completed self-administered questionnaires.

Much of the data collected in the in-depth study were obtained at the classroom level. However, the in-depth analysis of successful schools is primarily concerned with examining school-level variations in program characteristics. Consequently, data collected at each site were aggregated to the level of the school. Posttest achievement gain in reading and math (1974-1975) was similarly aggregated to the school level.

Schools were defined as successful in reading or math if two of the three grades tested showed any improvement in national percentile ranks for the 1974-1975 school year. Using this definition of school success, 14 elementary schools were classified as successful in math, and nine elementary schools were classified as successful in reading (Table 1).

ORGANIZATIONAL CLIMATE IN THE IN-DEPTH STUDY ELEMENTARY SCHOOLS

The in-depth study of successful schools has focused on five major dimensions of organizational climate:

- The extent to which teachers participate in policy decisions;
- The amount and kind of instructional supervision and guidance provided to teachers, including the extent to which teachers accurately perceive the principal's instructional norms;

- The extent to which the long range objectives of the school are shared by teachers and administrators;
- The amount of instructional support provided to teachers; and
- The amount of teacher satisfaction.

Although each of the above dimensions of organizational climate was found to be related to student achievement, time and space considerations do not permit a full presentation of these results here. Consequently, the findings reported in this paper will focus on the first and second dimensions listed; teacher participation in decision-making and teacher perceptions of the principal's instructional norms.

1. Participation in Decisions

The extent to which teachers are responsible for policy decisions relative to school administrators was determined by presenting teachers and principals with the following seven decision areas during the interview:

- Selection of basic instructional materials;
- Student grouping procedures;
- Student grading procedures;
- Kinds and availability of co-curricular activities;
- Focus and eligibility requirements for teacher inservice training;
- School-community interaction; and
- Implementing intercultural curricula.

Respondents were asked to rate each area for amount of teacher participation using a five-point scale. As shown in Table 2, teachers in a majority of schools estimated their participation as low in two areas ("focus and eligibility requirements for teacher inservice training" and "school-community interaction"), moderate in three areas ("selection of basic instructional materials", "student grading procedures", and "kinds and availability of co-curricular activities"), high in one area ("student grouping procedures") and moderate or high in one area ("implementing intercultural curricula"). Principals in a majority of schools estimated teacher participation to be high in all areas except one ("focus and eligibility requirements for teacher inservice training"). The average amount of participation for all areas was moderate in a large majority of schools, as calculated from either teachers' or principals' estimates.

It can also be seen from these data that principal estimates of teacher participation tended to be greater than teacher estimates. In some areas the difference was slight, "student grouping procedures," for instance. But in one area, "school-community interaction," the difference was quite large; teachers reported that they participated little in this area while principals reported that teachers participated a great deal.

In addition to giving estimates of the extent to which decisions are shared, teachers and principals also ranked the seven areas from most important through least important. Responses were analyzed to determine the amount of agreement implied by these rankings.* It was found that teachers agreed among themselves on the overall relative importance in nearly all schools. Not only is there

*Agreement among teachers within a school was determined by using Kendall's coefficient of concordance with $\alpha \leq .05$.

agreement within schools, but it is evident that teachers in general, irrespective of the school, shared similar views of which decision involving their work is most important. "Selection of basic instructional materials" was ranked first by teachers in an overwhelming number of schools.

Principals, however, varied from school to school regarding which decision area is most important. In 15 elementary schools, "selection of basic instructional materials" was most important to principals. In the remaining schools one of the other areas was considered most important.

The number of schools where teachers and principals agreed is moderate. Agreement was significant in eight elementary schools, and nearly so in another three schools.*

2. Accuracy of Teachers' Perception of Principals' Instructional Norms

Five specific instructional practices were presented to principals, who were asked to indicate which ones they espoused. Teachers were presented with the same items and asked to indicate which ones they believed to represent the principal's thinking. These items were:

- With many students, basic skills should be set aside until the students are ready to learn.
- Teachers should carefully plan their instruction in terms of specific short-term objectives.

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*Agreement between teachers and principals was determined by using Spearman's rank order correlation coefficient with $\alpha \leq .05$.

- Teachers should try to tailor instruction to the needs of individual students.
- Teachers should use diagnostic testing and concentrate on students' weak areas.
- Teachers should avail themselves of special help where needed, e.g., remedial teachers, counselors, etc.

Although these items were not analyzed by content (rather for the accuracy with which teachers perceived the principal's norms and expectations) a large majority of principals favored each of these. For each of these instructional practices, the teachers of fewer schools believed the principal to be of such mind. Disparities occurred most often on "setting aside basic skills" and the use of "short term objectives."

Schools sampled in the in-depth study scored the full range in how well teachers are informed about the instructional practices endorsed by the principal. In four elementary schools teachers accurately perceived the principal's point of view on all five practices, whereas in two schools they were misinformed on all five. In ten schools teachers accurately perceived the principal's thinking on four of the five practices. In the remaining eight schools teachers accurately perceived one to three of the principal's instructional norms. We have interpreted this scale as a measure of the extent to which the principal effectively promotes the administrative point of view regarding instructional norms (Table 3).

ORGANIZATIONAL CLIMATE AND STUDENT ACHIEVEMENT

Four key findings concerning administrators suggest the importance of leadership to school success in the in-depth study. Gains in math achievement were more likely to occur in schools where:

- Administrators assumed more responsibility for policy decisions;
- Administrators emphasized the importance of selecting basic instructional materials;
- Administrators assumed more responsibility for the selection of basic instructional materials;
- Administrators effectively communicated a point of view concerning teaching practices.

Turning first to these dimensions of leadership as they relate, one by one, to achievement:

1. Achievement gains tend to occur in schools where administrators assume more overall responsibility for policy decisions as estimated by teachers (Table 4).

Although judgments about the sharing of decision-making included two extremes: (1) that decisions are made exclusively by administrators and (2) that they are made exclusively by teachers, in no schools did overall* policy-making fall to either of these extremes. Only rarely did an individual teacher or principal

*A calculated average of the seven decision areas.

report either extreme for any single area. Thus, it is not possible to say that administrators assume some identifiable and distinctly large quantity of responsibility at schools that witness gains in achievement. The gains did occur, however, in schools where--compared to other schools in this study--administrators were reported to do more of the decision-making and teachers less. The associations of this dimension of leadership with math (ϕ = .33, NS) and reading (ϕ = .27, NS) achievement gains are weaker than those of any other dimension.

2. Schools where principals give first priority to decisions about the selection of basic instructional materials succeed in raising student achievement in math (Table 5).

This relationship suggests that the importance attached to the selection of instructional materials by principals may be one way in which they can influence instruction and student achievement. Additional support for this interpretation comes from the finding that when principals ranked selection of basic instructional materials first, they were more likely to assume responsibility for the selection of instructional materials (ϕ = .39, $\alpha \leq .05$). The next finding provides key evidence supporting the proposition that administrative leadership in instructional matters may be important to school success.

3. Schools where administrators assume more responsibility for selecting basic instructional materials succeed in raising student achievement in math (Table 6).

Teachers no doubt are capable of making wise choices and administrators capable of unfortunate ones when selecting basic instructional materials. However, it is difficult to attribute the lack of achievement gain when teachers share more in decisions to their poor judgment, or conversely, to believe that administrators

are better at selecting instructional materials. In schools where administrators are more responsible for choosing materials it may be that a more coordinated schoolwide instructional approach is operating to enhance learning. In any event, when teachers estimated administrative responsibility in choosing instructional materials, 14 elementary schools were ranked low in administrative responsibility and 10 were ranked high. Of these 10, nine were schools that had consistent gain in math achievement.

4. The accuracy with which teachers perceive instructional norms favored by administrators is associated with achievement gains in math (Table 7).

The methods used by effective administrators to communicate their views remain unclear. Analysis showed that the accurate perception by teachers of the instructional norms espoused by the principal cannot be attributed to the sending of memoranda or directives regarding classroom practices, to discussions of goals and methods at faculty meetings, to frequent classroom visits, nor to a combination of these and other channels. It is presumed, nevertheless, that for teachers to be aware of these norms some form of communication is necessary and is effectively taking place.

Agreement between teachers and principals in other areas, namely, the long-range objectives of the school and priorities in policy development, was not associated with achievement. Thus, while the possibility remains that agreement on instructional norms is important, the importance of a more general agreement was not associated with achievement in the in-depth study.

It was also found that an accurate perception by teachers of views by the administration on other, non-instructional matters (e.g., being correctly informed on school activities and resources) was not associated with achievement gains. The instructional norms in question concern teaching practices that are behaviorally specific. An accurate understanding of an administrator's views on these practices may be more useful in terms of carrying out an instructional program than the comprehension of long-range objectives, which are nearly always behaviorally vague. Similarly, to be well informed on matters less directly concerned with instruction may have little effect on the instructional program.

We suggest this points to a particular style of administrative leadership in successful schools. Administrators who advance an educational philosophy in concrete terms, who succeed in communicating this view, and whose concern and energy focus sharply on instruction are those who are more likely to manage successful schools.

Strong correlations among the above key dimensions of effective administration make possible several other statements:

5. Where teachers accurately perceive the principal's instructional norms, principals assume greater responsibility for selecting basic instructional materials (Table 8).

No doubt the selection itself, that is, the content of the selected material, conveys something about the principal's educational views. We expect, however,

that a more active and articulate communication is required in order for teachers to be cognizant of the principal's ideas on teaching practices. The same qualities that motivate a principal to select basic materials may also result in effective communication on various teaching practices: the use of specific short-term objectives, the use of diagnostic testing, individualized instruction and so forth.

6. Where a principal gives greatest priority to the selection of instructional materials, teachers accurately perceive the principal's instructional norms (Table 9).

The orientation provided by principals bears directly on teachers' awareness. When the orientation is on instruction, teachers seem to be more aware of the principal's views regarding specific instructional practices.

The strong correlations among these key dimensions of an effective administration confirm the usefulness of conceiving them as an integrated whole--as leadership. Leadership is an abstraction, but in the case of school administrators, one with tangible referents: assumption of responsibility, focus (on instruction in particular) and the ability to communicate that focus effectively.

A composite index of leadership was constructed using the four key dimensions described above. The distribution of scores formed a bimodal curve where 12 of the 24 schools scored 0 or 1 (low), and 10 schools scored 3 or 4 (high). In view of the very strong inter-item associations, the bimodal distribution was expected (Table 10).

A cross tabulation of these leadership scores with achievement makes possible the following conclusion:

7. Administrative leadership in instruction is strongly associated with success in raising academic achievement.

The relation with math gains is very strong, and the relation with reading gains is worth noting (Table 11).

Up to this point the analysis of administrative leadership has involved the examination of a series of bivariate relationships with student achievement. However, a more definitive test of the relationship between centralized leadership and school success must examine student background characteristics as a possible source of spurious correlation between the Leadership Scale and student achievement. A stepwise discriminant-function analysis using the criterion categories of successful-nonsuccessful in reading and math achievement was performed for this purpose.*

*The objective of a discriminant-function analysis is to predict an a priori classification of cases (e.g., successful schools vs unsuccessful schools) based on a linear combination of predictor variables. The discriminant-function analysis reported here is similar to a multiple regression in which the dependent variable is dichotomized. The interpretation of a standardized discriminant function coefficient is analogous to the interpretation of a beta weight in a regression analysis. Consequently, each discriminant-function coefficient represents the relative contribution of its associated variable to the function in question. The canonical correlation coefficient is a measure of the association between the discriminant function (i.e., the linear combination of predictor variables) and the variable which defines group membership.

The discriminant analysis was conducted in two phases. In the first phase only the student background characteristics of percent minority student enrollment and 1974 pretest score were entered into the equation.* The results obtained from this analysis provide a baseline measure for assessing the contribution of administrative leadership to school success, relative to these student background items. In the second phase of the analysis the Leadership Scale was added to the function. Table 12 reports these results for the math achievement criterion. Reading achievement was not found to be associated with the Leadership Scale, although the results were in the same direction as with math achievement.

As shown in Table 12, the function based entirely on student variables is correlated .57 with the math criterion. Seventeen of the 24 schools were correctly classified in this analysis, while seven schools were misclassified on the basis of student background information.

When the Leadership Scale is added to the analysis, additional precision is obtained in predicting the math criterion. Thus, the correlation between the predictor variables and the criterion jumps to .72, while the number of misclassified schools drops from seven to four. Moreover, inspection of the (standardized) discriminant-function coefficients reveals that the contribution of the Leadership Scale to the total function score is equal to the combined contribution of percent minority enrollment and pretest score. These findings indicate that: (1) the Leadership Scale remains significantly associated with

*The scoioeconomic level of the student body, as determined by student reports of luxury items in the home, was unrelated to math achievement gain in the in-depth sample. This finding undoubtedly results from the method of site selection, which included matching schools on the basis of their socioeconomic standing.

math achievement gain after the two student background variables have been accounted for in the analysis, and (2) the Leadership Scale makes a substantial contribution to the total function score that predicted the math criterion with 83 percent accuracy.

SUMMARY AND DISCUSSION

The in-depth study of organizational climate would seem to provide several interesting topics for discussion at this session of the AERA meetings. The following summary of results may help to focus our attention on several of the more interesting implications of this analysis.

Finding: Perceptions of the principal's leadership style were found to be significantly related to math achievement gain.

This conclusion is substantiated by the major findings reported in this paper. Thus, math achievement gains were more likely to occur in schools where:

- Teachers reported that school administrators made more of the policy decisions at school.
- Principals reported that they gave first priority to decisions regarding the selection of basic instructional materials.
- Teachers reported that school administrators made more of the decisions regarding the selection of basic instructional materials.
- Teachers were more accurate in their perceptions of the principal's instructional norms.

Not only were the above items associated with math achievement, but they were also highly intercorrelated. When these items were combined to form a composite index of "administrative leadership," the correlation between this scale and math achievement was very strong, and remained significant after student background characteristics were taken into account.

These findings would seem to indicate that an effective instructional program requires direction and leadership. This interpretation does not imply that administrators in the successful in-depth schools made decisions without the assistance of teachers. It was rarely reported that administrators made decisions with no input from teachers. Administrative leadership, then, would seem to indicate active involvement by administrators in the decision making process rather than the exclusion of teachers. Furthermore, teachers may be participating extensively in decision areas not investigated in this study, including decisions affecting the implementation of school policy.

We should also be reminded that the sites selected for in-depth study are not representative of the schools in this country. Most of the schools participating in ESAA were facing a troubled future in education prior to ESAA; these schools consistently ranked in the bottom quartile in reading and math achievement when ESAA started, and, as we know from previous research, these same schools have stood little chance of catching up.

Yet improvement in academic performance was made in a substantial number of schools in the in-depth study, and one of the strongest correlates to this improvement was administrative leadership. One interpretation of this

finding is that principals who are active in making policy decisions are also more likely to promote specific instructional techniques that relate to math achievement. However, little evidence was found to support this hypothesis. Administrative leadership was either unrelated or only moderately related to: paid parent aides in the classroom, the use of specific instructional objectives, the provision of specific feedback to students, and the presence of math specialists--although each of these program components was positively associated with math gain.

Another interpretation of the relationship between the Leadership Scale and math achievement is that administrative leadership affects the structure of the instructional program more than it does the procedures or content of instruction. For example, schools with a high level of administrative involvement in policy decisions may have little in common with respect to the use of specific instructional techniques, and yet be very similar in that their instructional programs are coordinated and internally consistent across grades and classes. In other words, the relationship between the Leadership Scale and math achievement might suggest the importance of a coordinated school-wide program as a general intervention strategy for educationally disadvantaged students.

Finding: Teacher and principal perceptions of organizational climate were found to differ on a number of important dimensions. Consequently, it makes a difference whether the organizational climate of the school is defined by the teachers or the principal.

It has long been understood that perceptions of organizational goals and activity are likely to differ within an organization. The most compelling example of this tendency in our study occurs with respect to teacher and principal perceptions of teacher participation in the decision-making process at school; principals consistently reported greater teacher participation than did teachers.

It is interesting to note, however, that one of the items strongly related to math achievement gain was teacher accuracy in perceiving the principal's instructional norms. As expected, it was found that teachers were more likely to perceive the principal's instructional norms when the principal, according to teacher estimates, made most of the decisions regarding the selection of basic instructional materials.

Consistent with the interpretation advanced above, teachers' inability to perceive the principal's instructional norms may be symptomatic of a school administration that gives little attention to the problems of coordinating and guiding a school-wide instructional program. Thus, principals who are active in the area of selecting basic instructional materials may be more likely to provide the school with an articulated approach to instruction, which results in greater teacher awareness of the principal's instructional norms.

Finding: The degree of emphasis the principal placed on decisions regarding instructional matters was more strongly related to math achievement than the degree of emphasis the principal placed on long-range academic goals.

It was found that an emphasis by principals on long-range academic goals was only slightly related to reading achievement and was unrelated to math achievement. Thus, while the degree of emphasis placed on the selection of basic instructional materials was strongly related to math achievement, a similar emphasis on a conceptually related item, long-range academic goals, was essentially unrelated to achievement gain. These results may indicate that to value an action leading to a goal (i.e., selecting basic instructional materials) may be more important to school success than merely placing a high value on the goal itself (i.e., long-range academic goals). Perhaps the long-range goals of the school are too abstract to have a significant influence on school outcomes, while the decision-making activity, being more behaviorally specific, provides a better index for judging the school's administrative orientation.

APPENDIX A

ANALYSIS TABLES

Analysis Tables

TABLE NUMBER	
1	NUMBER OF ELEMENTARY SCHOOLS SHOWING IMPROVEMENT IN NATIONAL PERCENTILE RANKS FOR READING AND MATH DURING 1974-1975
2	NUMBER OF SCHOOLS WITH VARYING DEGREES OF TEACHER PARTICIPATION IN POLICY DECISIONS
3	NUMBER OF SCHOOLS WITH VARYING DEGREES OF TEACHER ACCURACY IN RECEIVING PRINCIPAL'S INSTRUCTIONAL NORMS
4	CROSS-TABULATION OF ADMINISTRATIVE RESPONSIBILITY FOR POLICY DECISIONS IN GENERAL BY READING AND MATH ACHIEVEMENT GAIN 1974-1975
5	CROSS-TABULATION OF PRINCIPAL'S EMPHASIS ON DECISIONS REGARDING SELECTION OF BASIC INSTRUCTIONAL MATERIALS BY READING AND MATH ACHIEVEMENT GAIN 1974-1975
6	CROSS-TABULATION OF ADMINISTRATIVE RESPONSIBILITY FOR SELECTING BASIC INSTRUCTIONAL MATERIALS BY READING AND MATH ACHIEVEMENT GAIN 1974-1975
7	CROSS-TABULATION OF ACCURACY OF TEACHERS' PERCEPTION OF PRINCIPAL'S INSTRUCTIONAL NORMS BY READING AND MATH ACHIEVEMENT GAIN 1974-1975
8	CROSS-TABULATION OF ADMINISTRATIVE RESPONSIBILITY FOR SELECTING BASIC INSTRUCTIONAL MATERIALS BY ACCURACY OF TEACHERS' PERCEPTION OF PRINCIPAL'S INSTRUCTIONAL NORMS
9	CROSS-TABULATION OF PRINCIPAL'S EMPHASIS ON DECISIONS REGARDING SELECTION OF BASIC INSTRUCTIONAL MATERIALS BY ACCURACY OF TEACHERS' PERCEPTION OF PRINCIPAL'S INSTRUCTIONAL NORMS
10	DISTRIBUTION OF SCORES TO ADMINISTRATIVE LEADERSHIP SCALE
11	CROSS-TABULATION OF ADMINISTRATIVE LEADERSHIP SCALE BY READING AND MATH ACHIEVEMENT GAIN 1974-1975
12	STEPWISE DISCRIMINANT FUNCTION ANALYSIS INVOLVING STUDENT BACKGROUND VARIABLES, ADMINISTRATIVE LEADERSHIP SCALE, AND SCHOOL SUCCESS IN MATH ACHIEVEMENT 1974-1975.

TABLE 1: Number of Elementary Schools Showing Improvement in National Percentile Ranks for Reading and Math During 1974-1975

READING ACHIEVEMENT		MATH ACHIEVEMENT	
Percent of Grades Tested (3, 4, and 5) Showing Improvement in Percentile Ranks	Number of Schools	Percent of Grades Tested (3, 4, and 5) Showing Improvement in Percentile Ranks	Number of Schools
100% (3/3)	3(12.5%)	100% (3/3)	7(29.9%)
66% (2/3)	5(20.9%)	66% (2/3)	7(29.2%)
50% (1/2)*	1(4.2%)	50% (1/2)	0(0%)
33% (1/3)	11(45.8%)	33% (1/3)	8(33.3%)
0% (0/3)	4(16.6%)	0% (0/3)	2(8.3%)
	24(100%)		24(100%)

*One school in the in-depth study sample was tested for reading achievement in only the third and fourth grades.

TABLE 2: Number of Schools with Varying Degrees of Teacher Participation in Policy Development

Decision Area	Teachers			Principals			
	Low	Med	High	Low	Med	High	MD
• Selection of basic instructional materials	3	16	5	4	5	15	
• Student grouping procedures	2	6	16	1	4	19	
• Student grading procedures	4	12	8	5	6	13	
• Kinds and availability of co-curricular activities	3	19	2	5	3	16	
• Focus and eligibility requirements for teacher inservice training	15	9	0	10	4	10	
• School-community interaction	12	8	4	3	6	15	
• Implementing intercultural curricula	2	12	10	2	5	16	1
Average over all areas	3	19	2	5	15	4	

OPERATIONAL DEFINITIONS:

Respondents rated amount of participation on five-point scale, where:

Principals: low = 1, 2
medium = 3
high = 4, 5
MD = missing data

Teachers: low = 1.0 to 2.9
medium = 3.0 to 3.9
high = 4.0 to 5.0
Scores were averages of all sample teachers at a school.

TABLE 3: Distribution of Schools with Varying Degrees of Teacher Accuracy in Perceiving Principal's Instructional Norms

Number of Times that Teachers Accurately Perceive Principal's Response to Instructional Norms	Number of Elementary Schools
None	2 (8.3)
1	1 (4.2)
2	3 (12.5)
3	4 (16.6)
4	10 (41.7)
All	4 (16.6)
	24 (100.0)

Operational Definition

Principals were asked to indicate their agreement with five instructional techniques:

- Basic skills should be set aside until the students are ready to learn.
- Teachers should plan their instruction using specific instructional objectives.
- Teachers should tailor instruction to the needs of individual students.
- Teachers should use diagnostic tests and concentrate on students' weak areas.
- Teachers should avail themselves to special help where needed.

Teachers within a school were coded as accurately perceiving the principal's agreement or disagreement with a given instructional technique if at least two-thirds of the sample teachers correctly perceived the principal's answer.

TABLE 4: Cross-Tabulation of Administrative Responsibility for Policy Decisions in General by Reading and Math Achievement Gain 1974-1975

Administrative Responsibility for Policy Decisions in General	Math Achievement Gain: High	Math Achievement Gain: Low	
High	7(87.5)	1(12.5)	8(33.3)
Low	7(43.8)	9(56.3)	16(66.7)
	14(58.3)	10(41.7)	24(100.0)
	ϕ = .33	$\alpha \leq .11$	

Administrative Responsibility for Policy Decisions in General	Reading Achievement Gain: High	Reading Achievement Gain: Low	
High	5(62.5)	3(37.5)	8(33.3)
Low	4(25.0)	12(75.0)	16(66.7)
	9(37.5)	15(62.5)	24(100.0)
	ϕ = .27, NS		

OPERATIONAL DEFINITIONS:

1. Administrative responsibility for policy decisions in general

   High = Teachers' estimates: 1.0 to 3.2 on 5 point scale.

   Low = Teachers' estimates: 3.3 to 5.0 on 5 point scale.

2. Reading and math achievement gain 1974-1975

   High = at least two of the three grades tested showed improvement in national percentile ranks.

   Low = at least two of three grades tested showed no improvement in national percentile ranks.

TABLE 5: Cross-Tabulation of Principal's Emphasis on Decisions Regarding Selection of Basic Instructional Materials by Reading and Math Achievement Gain 1974-1975

Math Achievement Gain

Principal's Emphasis on Decisions Regarding Selection of Basic Instructional Materials	High	Low	
High	12(80.0)	3(20.0)	15(62.5)
Low	2(22.2)	7(77.8)	9(37.5)
	14(58.3)	10(41.7)	24(100.0)

$\phi = .48$ $\alpha \leq .02$

Reading Achievement Gain

Principal's Emphasis on Decisions Regarding Selection of Basic Instructional Materials	High	Low	
High	7(46.7)	8(53.3)	15(62.5)
Low	2(22.2)	7(77.8)	9(37.5)
	9(37.5)	15(62.5)	24(100.0)

$\phi = .16$, NS

OPERATIONAL DEFINITIONS:

1. Principal's emphasis on decisions regarding selection of basic instructional materials

   High = ranked first among seven decision areas.

   Low = ranked second or lower among seven decision areas.

2. Reading and math achievement gain 1974-1975

   High = at least two of three grades tested showed improvement in national percentile ranks.

   Low = at least two of three grades showed no improvement in national percentile ranks.

TABLE 6: Cross-Tabulation of Administrative Responsibility for Selecting Basic Instructional Materials by Reading and Math Achievement Gain 1974-1975

Math Achievement Gain

Administrative Responsibility for Selecting Basic Instructional Materials		High	Low	
	High	9(90.0)	1(10.0)	10(41.7)
	Low	5(35.7)	9(64.3)	14(58.3)
		14(58.3)	10(41.7)	24(100.0)

ϕ = .46 $\alpha \leq .03$

Reading Achievement Gain

Administrative Responsibility for Selecting Basic Instructional Materials		High	Low	
	High	5(50.0)	5(50.0)	10(41.7)
	Low	4(28.6)	10(71.4)	14(58.3)
		9(37.5)	15(62.5)	24(100.0)

ϕ = .13, NS

OPERATIONAL DEFINITIONS:

1. Administrative responsibility for selecting basic instructional materials

   High = Teachers' estimates: 1.0 to 3.3 on 5 point scale.

   Low = Teachers' estimates: 3.4 to 5.0 on 5 point scale.

2. Reading and math achievement gain 1974-1975

   High = At least two of three grades tested showed improvement in national percentile ranks.

   Low = At least two of three grades tested showed no improvement in national percentile ranks.

TABLE 7: Cross-Tabulation of Accuracy of Teachers' Perception of Principal's Instructional Norms by Reading and Math Achievement Gain 1974-1975

		Math Achievement Gain: High	Math Achievement Gain: Low	
Accuracy of Teachers' Perception of Principal's Instructional Norms	High	11(78.6)	3(21.4)	14(58.3)
	Low	3(30.0)	7(70.0)	10(41.7)
		14(58.3)	10(41.7)	24(100.0)

$\phi = .40$ $\alpha \leq .05$

		Reading Achievement Gain: High	Reading Achievement Gain: Low	
Accuracy of Teachers' Perception of Principal's Instructional Norms	High	7(50.0)	7(50.0)	14(58.3)
	Low	2(20.0)	8(80.0)	10(41.7)
		9(37.5)	15(62.5)	24(100.0)

$\phi = .22$, NS

OPERATIONAL DEFINITIONS:

1. Accuracy of teachers' perception of principal's instructional norms

   High = Teachers perceive principal's point of view on four of five specific teaching practices.

   Low = Teachers perceive principal's point of view on less than four specific teaching practices.

2. Reading and math achievement gain 1974-1975

   High = At least two of three grades tested showed improvement in national percentile ranks.

   Low = At least two of three grades tested showed no improvement in national percentile ranks.

TABLE 8: Cross-Tabulation of Administrative Responsibility for Selecting Basic Instructional Materials by Accuracy of Teachers' Perception of Principal's Instructional Norms

		Accuracy of Teachers' Perception of Principal's Instructional Norms		
		High	Low	
Administrative Responsibility for Selecting Basic Instructional Materials	High	9(90.0)	1(10.0	10(41.7)
	Low	5(35.7)	9(64.3)	14(58.3)
		14(58.3)	10(41.7)	24(100.0)
		ϕ = .46	$\alpha \leq .03$	

OPERATIONAL DEFINITIONS:

1. Administrative responsibility for selecting basic instructional materials

   High = Teachers' estimate: 1.0 to 3.3 on 5 point scale.

   Low = Teachers' estimate: 3.4 to 5.0 on 5 point scale.

2. Accuracy of teachers' perception of principal's instructional norms

   High = Teachers perceive principal's point of view on four or more of five specific teaching practices.

   Low = Teachers perceive principal's point of view on less than four specific teaching practices.

TABLE 9: Cross-Tabulation of Principal's Emphasis on Decisions Regarding Selection of Basic Instructional Materials by Accuracy of Teachers Perception of Principal's Instructional Norms

		Accuracy of Teachers' Perception of Principal's Instructional Norms		
		High	Low	
Principal's Emphasis on Decisions Regarding Selection of Basic Instructional Materials	High	12(80.0	3(20.0)	15(62.5)
	Low	2(22.2)	7(77.8)	9(37.5)
		14(58.3)	10(41.7)	24(100.0)
		ϕ = .48	$\alpha \leq .02$	

OPERATIONAL DEFINITIONS:

1. Principal's emphasis on decisions regarding selection of basic instructional materials

   High = Ranked first among seven decision areas.

   Low = Ranked second or lower among seven decision areas.

2. Accuracy of teachers' perception of principal's instructional norms

   High = Teachers perceive principal's point of view on four or more of five specific teaching practices.

   Low = Teachers perceive principal's point of view on less than four specific teaching practices.

TABLE 10: Distribution of Scores to Administrative Leadership Scale

Scale Scores*	Number of Elementary Schools
0 (low)	5 (20.8)
1	7 (29.2)
2	2 (8.3)
3	4 (16.6)
4 (high)	6 (25.0)
	24 (100.0)

OPERATIONAL DEFINITIONS:

Administrative Leadership Scale is composed by summing scores for the following items, where high = 1 and low = 0:

1. Administrative responsibility for policy decisions in general (Table 4).
2. Principal's emphasis on decisions regarding selection of basic instructional materials (Table 5).
3. Administrative responsibility for selecting basic instructional materials (Table 6):
4. Teachers' accuracy in perceiving principal's instructional norms (Table 7).

TABLE 11: Cross-Tabulation of Administrative Leadership Scale by Reading and Math Achievement Gain 1974-1975

Math Achievement Gain

Administrative Leadership Scale Scores		High	Low	
	High	10(100.0)	0(0.0)	10(41.7)
	Low	4(28.6)	10(71.4)	14(58.3)
		14(58.3)	10(41.6)	24(100.0)
		ϕ = .63	$\alpha \leq .002$	

Reading Achievement Gain

Administrative Leadership Scale Scores		High	Low	
	High	6(60.0)	4(40.0)	10(41.7)
	Low	3(21.4)	11(78.6)	14(58.3)
		9(37.5)	15(62.5)	24(100.0)
		ϕ = .31	$\alpha \leq .13$	

OPERATIONAL DEFINITIONS:

1. Administrative Leadership Scale (see Table 10):

   High = 3, 4, on four point scale.

   Low = 0, 1, 2 on four point scale.

2. Reading and math achievement gain 1974-1975

   High = At least two of three grades tested showed improvement in national percentile ranks.

   low = At least two of three grades tested showed no improvement in national percentile ranks.

TABLE 12: Stepwise Discriminant Function Analysis Involving Student Background Variables, Administrative Leadership Scale, and School Success in Math Achievement*

Variables in Function	Standardized Discriminant Function Coefficients	Number and Percent Correct Predictions						Canonical Correlation	Significance**
		Successful Schools (N=14)		Unsuccessful Schools (N=10)		Total (N=24)			
		#	%	#	%	#	%		
Percentage Minority Enrollment	-.95								
Pretest Math Score 1974	-.98	11	78.6	6	60.0	17	70.83	.57	$\alpha \leq .015$
Percent Minority Enrollment	-.52								
Pretest Math Score 1974	-.25	12	85.7	8	80.0	20	83.33	.72	$\alpha \leq .002$
Administrative Leadership Scale	.76								

*The discriminant-function analysis reported here contains a Bayesian adjustment for the probability of group membership based on the number of cases in both groups. The stepwise criterion used to determine entry into the function is based on the estimate of 1.0 minus the square of the multiple correlation between the set of discriminating variables and the classification variable used to define group membership; if the discriminating variable adds significantly to the explained variance in the dummy variable that accounts for group membership ($\alpha \leq .01$), then the item is added to the function. In this analysis the Leadership Scale was the last item entered into the equation.

**Significance level for the discriminant function is based on the Chi-square distribution with 1 degree of freedom.